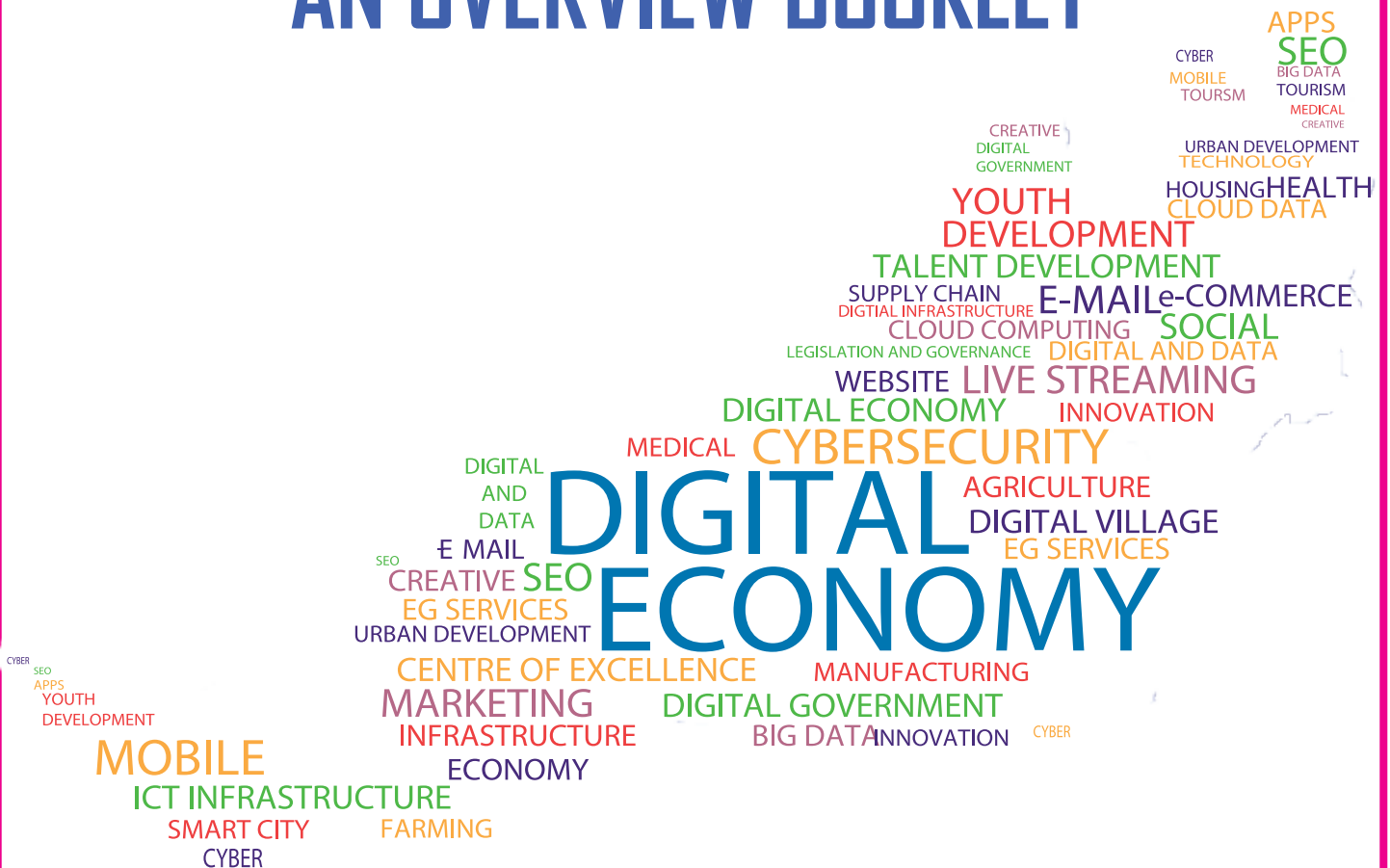




SARAWAK DIGITAL ECONOMY STRATEGY 2018 - 2022

AN OVERVIEW BOOKLET



FOREWORD



My first priority for Sarawak since becoming the Chief Minister on the 13th January 2017 was to bring about a major paradigm shift in our development strategy. We have so far been relying heavily on non-renewable resources for our economic development and this is clearly not sustainable in the long run. It was quite obvious then with the whole world focused on emerging technologies such as gaming and animation, big data, cloud computing, blockchains, artificial intelligence, autonomous vehicles, and renewable energy we have to enter without hesitation into the digital world so that Sarawak will have a chance of enjoying high income.

I immediately asked the State Secretary to organise an international conference on the digital economy in Sarawak and spearhead the Digital Economy Transformation. The first International ICT Infrastructure and Digital Economy Sarawak (IDECS) - Transforming Sarawak through the Digital Economy - was held on the 3rd and 4th of April 2017 in Kuching featuring notable local and international speakers with over 1,500 delegates. During the closing ceremony of the conference, I also announced that Sarawak will set up the Sarawak Multimedia Authority (SMA), the Sarawak Digital Economy Corporation (SDEC), Development Bank of Sarawak (DBOS), as well as a strategic plan for developing the digital economy of Sarawak.

I am therefore pleased to present the five year Sarawak Digital Economy Strategy (2018-2022), in which we set out the possible directions Sarawak can take in order to leapfrog into the digital economy to be at the forefront of the digital world. In our search for a practical digital strategy for Sarawak, we visited a few countries particularly Australia, Finland, Estonia, Germany, France and China. The biggest lesson we learnt is that digital economy is not merely about the frontier of the digital technology, but also ideas about how society can be organised more efficiently while protecting personal information and privacy which implies vigilance in the area of cybersecurity. Digital economy is also about being able to apply technology in a cost-effective manner. Going 'digital' is now a global trend, and Sarawak should also be involved in it, averse to any risks and making wise decision each step of the way.

As such, the digital economy is about the efficacy in which digital technology is applied to our everyday lives. To achieve this, we require diverse talents to create a new way of life for the people of Sarawak. The digital technology can then certainly be used to make our lives easier and simpler, and hopefully richer. It is really up to each and every one of us to embrace digital technologies in the best way that we can to make our own lives better, if not the lives of our neighbours.

I certainly see the development of the digital economy to be a collaborative effort between the government, the private business sector and the people of Sarawak. The government's role is to provide basic but necessary infrastructure to build the digital economy. In the urban setting, the digital infrastructure is adequate for building digital business and other commercial applications. The challenges in building the digital infrastructure tends to increase going into the more rural and remote areas of Sarawak. These challenges are worth taking up, for us to reach remote areas and provide them an avenue to connect with the rest of the world, thereby creating greater economic opportunities.

I am aware that the creation of new business opportunities is a major challenge for us in Sarawak. Sarawak is small and isolated, which has always been a disadvantage for us in development. I see the digital technology as an opportunity for Sarawak to remove the constraints of a small and isolated economy. We need to see the potential of opening up our local economy in hopes of strengthening our digital connection with the rest of the world.

Looking forward to the horizon, the next five years is a time which we shall improve our digital coverage as well as speed, motivate young talents to get involved in coding and product development, businesses to make their presence felt on the Internet through their websites and mobile apps, local business participation in global e-commerce platforms, the development of our own electronic payment system called SarawakPay – which will revolutionise making payments, in a more secured and convenient way. I also foresee its use across all local transactions; integrated into all government services online. The launch of our own big data along with the sharing of database by the Federal Government, this creates more opportunities for our communities and our businesses, drive competitiveness and productivity, and strengthen connectivity across Sarawak. The greater efficiency of mobility and connectivity in the major urban centres, and the general improvement in our local economic environment suggests that there is a better future we can build for Sarawakians.

I hope in the months and years to come, you and I can put our heads together to build a robust and thriving digital economy for Sarawak.

A handwritten signature in black ink, appearing to be 'Abang', written in a cursive style.

The Right Honourable Datuk Patinggi (Dr) Abang Haji Abdul Rahman Zohari Bin Tun Datuk Abang Haji Openg
CHIEF MINISTER OF SARAWAK

PREAMBLE



When the Right Honourable Chief Minister instructed me to take the lead in drawing up the maiden strategy for the Digital Economy of Sarawak, I first felt honoured, and then humbled and challenged.

Our main concern is to ensure that whatever plan we are going to have, the plan is adopted by everybody so that it will be implemented. We understand that the major challenge is to get it accepted by everyone. Around the world, civil servants are known to be reluctant to embrace the digital technology for fear of the unknown and to be drawn back by lack of knowledge and burdened by fear of some unmanageable consequences.

Certainly, the government must change the way we provide our services to the general public through the Digital Government. The public service can facilitate and provide an ecosystem which is conducive and needs the private sector and communities to co-partner and co-exist in moving forward our Government's agenda in achieving Sarawak Digital Economy's goals and objectives to greatly improve the livelihood of Sarawakians.

Therefore we decided to develop our Sarawak Digital Economy Strategy in-house by putting together the minds of Sarawakians, and friends of Sarawak, in both the government and the private sector in brain-storming sessions called labs. Under four clusters of subject matters namely Governance and Infrastructure, Economic Sectors, Smart City, and Talent and Research and Development, seventeen sub-subject areas were identified for studying and planning. Seventeen working groups were created to deal in-depth with each of these seventeen areas namely Legislation and Governance; Digital Infrastructure; Digital and Data; Cyber-security; Digital Government; Agriculture; Tourism; Manufacturing; e-Commerce; Health; Physical Infrastructure and Utilities; Housing and Urban Development; Transport, Logistics and Supply Chain; Talent Management; Digital Village; Centre of Excellence; and Digital Inclusivity.

In this booklet, you will find overview of the strategies and strategic actions totalling 47 in numbers with some programme examples that can be implemented. These represent our first version of the Sarawak Digital Economy Strategy for 2018 to 2022.

We are aware that it is important that the private sector has to be fully involved in the development of the digital economy in Sarawak. The role of the government is to provide the basic infrastructural support for the digital economy. We know that the private sector can be more in tune with the developments in the business and technological world in their specific areas of interest. We, as government servants, can work together and facilitate. We are always open to new ideas and suggestions. I am sure that this will also be the case with the Sarawak Multimedia Authority and the Sarawak Digital Economy Corporation who will be responsible for the policies and implementation respectively.

At this juncture, I join the Most Honourable Chief Minister in calling all Sarawakians, the civil servants and the general public, to work together to build a better tomorrow for Sarawak through the digital economy.

A handwritten signature in black ink, appearing to read 'A. Morshidi', with a horizontal line extending to the right.

The Honourable Tan Sri Datuk Amar Haji Mohamad Morshidi bin Abdul Ghani
Sarawak State Secretary

- Implement one-stop frontline government service
- Single Sign On and Sarawak ID
- SarawakPay Incentives and Promotion

- Old Kuching - Digital Heritage
- Standard Portal and App Development
- Health Tourism Roadshow – Incorporate in Ministry of Tourism, Arts, Culture, Youth and Sports Sarawak's existing programme

- To spur growth of the automation ecosystem and accelerate Industry 4.0 in the local manufacturing sector
- Accelerate SMEs growth of Economy driven

- Geospatial Database
- Agro park project
- IoT for smart farming
- IoT for Integrated Livestock farming
- IoT for Empurau farming
- IoT for Collection, Processing and Packaging Centre
- IoT for swiftlet farming

- Build fibre connection
- Create new backbone using Sarawak Energy fibre asset
- Improve 3G and 4G performance
- Leverage on BBGP fibre lines to expand 3G / 4G
- Kick start IoT applications by setting up LP WAN in cities
- Increase access to fixed line broadband (100mbps) for businesses in cities

- CENTEXS/HUAWEI collaboration on digital training to support Industry
- Up skilling and reskilling of graduate for DE, STEM Education

- Study on State Digital readiness
- Community resource / digital centres in rural area
- Dialogues with Community Leaders, NGOs and Private Sectors
- Digital Literacy programme for communities

- Ready government Digital and Data Infrastructure
- Ready Big Data Portal applications, analytic tools and APIs



Sarawak Web

- To increase accessibility and improve level of medical and health services in rural and remote Sarawak and promote world class health tourism

- Developing eMarket Place
- Establish Intergrated Digital Free Trade Zone (DTFZ)

- Centralised Infrastructure and Utility Mapping
- Smart Systems in Housing Estates
- Digital Planning System
- Free Public WiFi Hotspot
- Upgrading and Improvement Works to Green Waste Disposal Centre
- Integrated Smart Development Planning
- Smart and Sustainable Stormwater Management
- Smart Water Metering System
- Crime Monitoring Centre Phase 1
- Smart Systems in Strata Titles Housing
- Central Traffic Management System
- Implementation of Bus Information System (BIS) at State Bus Service Transformation (SBST)

- Implementation of cyber security monitoring centre
- Implementation of web application firewall
- Implementation of end point security
- Data security / Protection framework and implementation
- Implementation of Intrusion Prevention System

- Establish Digital Village
- Digital Village Facility Development
- Digital Innovation Hub
- Intellectual Property Filings Venture Capital
- Digital Innovation Hub Sibul
- Digital Innovation Hub Bintulu
- Digital Innovation Hub Miri
- Private Sectors, University Digital Innovation Centre

- Digital Sports
- The rise of smart stadiums
- Deeper fan engagement
- Using technology for sponsorship and integration
- Globalisation of hometown team
- Art and Culture
- Social Development
- Wearable technology
- eSports
- Social Media

- Establish Centre of Excellence (CoE)
- Develop database of experts and stakeholders
- Establish Living Lab
- Data gathering for research



Vision

Sarawak New Economy Powered by Knowledge, Innovation & Digital Technology

Mission

- Accelerate Sarawak's Economic Growth
- Reduce Socio-Economic Divide
- Increase Employment of Youth

Digital Economy Benefits

- Enhance customers experience
- Developing higher skills and talented workforce
- Create more job opportunities
- Increase productivity
- Increase businesses, trade and exports
- Sarawak as an attractive investment destination
- Achieve higher income and economic growth
- Improve quality of life



SARAWAK DIGITAL ECONOMY OPPORTUNITIES AND IMPACTS

ICT Development in New Sectors

Data, Infrastructure, Softwares, Designs, Gaming

- Data transmission infrastructure (cables, international and local);
- Data storage centres, server farms (Cloud computing);
- Data generating centres (websites, mobile apps, sensor feedbacks);
- Data analytics centres (product R&D);
- Technology R&D (design, coding, illustration, animation, gaming).

Global Marketing and Sales

Traditional Sectors: Mainly Tourism, e-Commerce, others

- Marketing, attracting customers (websites, social networking);
- Selling, transaction, delivery

Spinoffs

Food & Beverage, Housing, Transportation, others

- Expansion in the growth of basic needs by ordinary people in everyday life provided by local providers and entrepreneurs

Raising Productivity Growth

Traditional Sectors: Mainly Agriculture, Manufacturing, Service, Government, others

- Production management and automation;
- Cost saving in storage and delivery;
- Digital Government;
- Saving time for the population;
- Transparency of policies;
- Open competition



“ It is time to introduce smart farming and other advanced methods to help the farmers increase productivity and income.”

The Honourable Datuk Amar Douglas Uggah Embas

Deputy Chief Minister

Minister of Modernisation of Agriculture & Rural Economy

Excerpt from Speech during Agro-based Industry (IAT) Entrepreneur Carnival 2017



“ This IDECS 2017 conference shows me that Sarawakians are all over the world, in terms of contributing to ICT skills, but not in Sarawak! Why? Where did we go wrong? So it's time for us to correct the wrong and make it right.”

The Honourable Tan Sri Datuk Amar Dr. James Jemut Masing

Deputy Chief Minister for Infrastructure Development & Transportation

Excerpt from Winding-Up DUN Speech 2017

“ You must have the audacity to dream big in e-commerce as the world is the marketplace for your product through the internet and ICT platform.”



The Honourable Datuk Amar Haji Awang Tengah Ali Hasan

Deputy Chief Minister

Minister Of Industrial and Entrepreneur Development Second Minister Of Urban Development & Natural Resources

Excerpt from Speech during World Islamic Economic Forum (WIEF) 2017

Institutional Structure

To ensure the proper development of the Sarawak Digital Economy, the Sarawak Government has decided to set up the Sarawak Multimedia Authority under the Sarawak Multimedia Authority Ordinance, 2017.

The Sarawak Multimedia Authority (SMA) is headed by the Chief Minister as the Chairman and he is assisted by a Board of Directors. The roles of SMA are:

- 1 To advise the Sarawak Government on matters relating to the State policy objectives for communications and multimedia activities.
- 2 To implement and enforce the provisions of State laws relating to communications and multimedia; and
- 3 To consider and recommend reforms to State laws relating to communications and multimedia.

The SMA also has the power to appoint committees and persons as well as incorporated companies, joint ventures, etc., on related activities, for the purpose of fulfilling its roles.

In line with this, the SMA shall incorporate the Sarawak Digital Economy Corporation (SDEC) as a Sarawak government-owned agency whose role is to implement the development of the communications and multimedia activities in Sarawak.

The SDEC shall be managed by local talent, to be headed by a Chief Executive Officer and guided by other members of the Board of Directors all of whom are experts in the digital technology and digital economy and its administration.

The SMA will be the one stop agency that provides the policy and facilitate the Digital Economy programmes and projects. The SDEC shall ensure the implementation of the key focus areas of the Sarawak Digital Economy which include, among others:

- Digital infrastructure
- Cyber-security
- Talent development
- e-Commerce
- R&D in digital technology
- Digital innovation entrepreneurship
- Digital government.

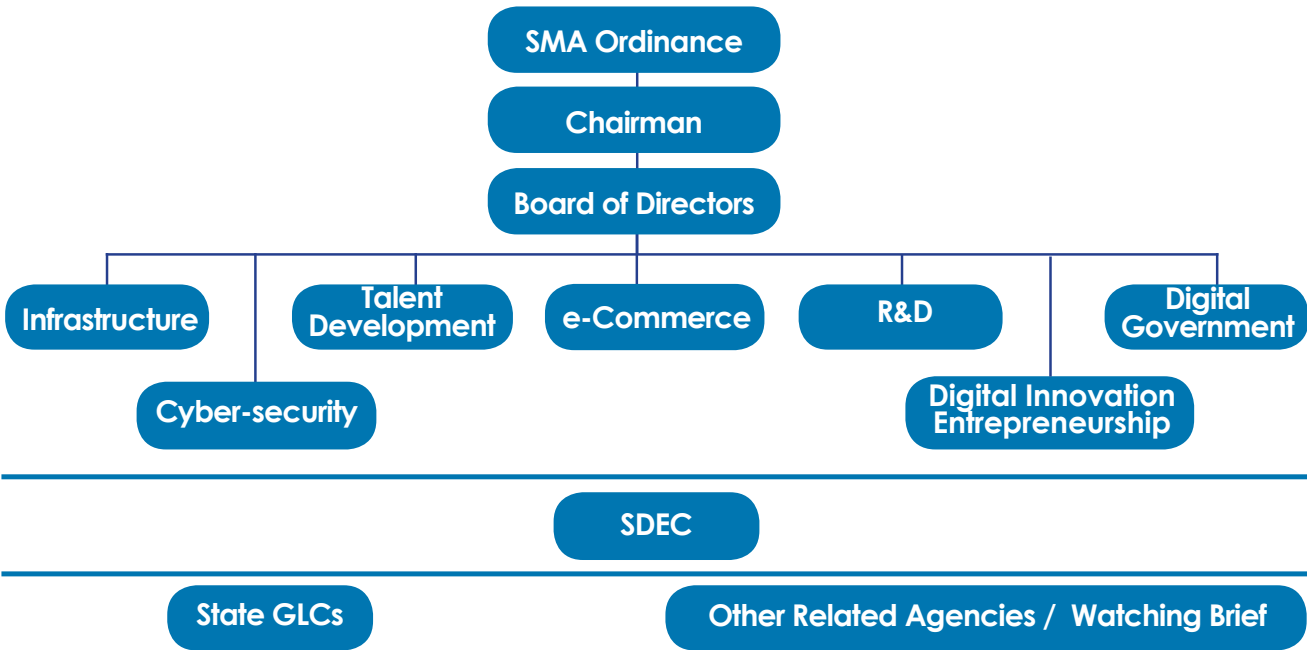
The anchor sectors of Sarawak Digital Economy are:

1. Agriculture
2. Manufacturing – Industry 4.0
3. Tourism
4. Smart City
5. Digital Health
6. e-Commerce
7. Digital Government

These sectors are supported by the following enablers:

1. Infrastructure
2. Digital Skills and Talent Development
3. Research and Development (R&D)
4. Digital Innovation and Entrepreneurship: Technology Transfer and Commercialisation
5. Digital and Data
6. Cyber-security

Sarawak Digital Economy Governance Structure





ECONOMIC SECTORS FOR SARAWAK DIGITAL ECONOMY



STRATEGIC ACTIONS OF SARAWAK DIGITAL ECONOMY TRANSFORMATION

47 **ECONOMIC SECTORS**
29 Strategic Actions

ENABLERS
18 Strategic Actions

AGRICULTURE



Future Fertigation at Rejang through Precision Farming



Objectives:

- To improve productivity and efficiency of agricultural sector
- To access to new markets for agriculture produce and products

STRATEGIC ACTIONS

ACTION 1

Adopt ICT and digital technologies in transforming the agricultural sector and driving innovation

Programme Examples:

- Implementation of IoT and sensor technology for smart farming (soil nutrient checking, precision fertilisation, smart fertigation, intelligent swiftlet forming, precision Empurau farming) implementation of geospatial system for agriculture planning and operation support development agro park, development of anchor farmers.

ACTION 2

Establish efficient distribution system for agriculture inputs and products

Programme Examples:

- IoT for Collection, Processing and Packaging Centre, Collection Centers (Processing, Distribution), Intelligent Supply Chain Management, Logistic

ACTION 3

Develop new markets and expand existing ones for agriculture produce and products

Programme Examples:

- Collaborate with Domestic and International Investors and venture capitalist, Branding, e-Commerce

Proposed Smart Farming at Rampangi Using IoT, Sensors and Mobile Apps

	<p>System Design</p> <ul style="list-style-type: none"> • Low power consumption • Fully automatic mixing and irrigation • Manual precise adjust when system on full or under maintenance • Communication via local wifi connection and internet • Low operating cost <p>User Interface</p> <ul style="list-style-type: none"> • Fully Interactive web-line control and status function • Clear friendly web interface • Variety screen resolution adaptation • Manual control option • Programmable fertigation formula and scheduling • Event and alarm log • User account concept <p>Structural Design</p> <ul style="list-style-type: none"> • Compact and durable • Easy installation • Easy maintenance • People standing concept 	<p>In modern agriculture system, a sensor and efficient fertigation system also essential one to produce a better yield. Growth better outcome because high accuracy, lower cost and precision in every task.</p> <p>Smart Agri is a system that provides automatic fertigation and irrigation system with precision. It is a system that allow system with automation a major fertigation crop with measuring from the data over an hour.</p> <p>Smart Agri is designed with the latest technology with the use of Internet of Things (IoT) to support smart to large scale fertigation line.</p> <p>Product Highlights</p> <ul style="list-style-type: none"> • Low initial cost • Low operating cost • Small to large scale system • Automatic mixing and irrigation based on programmable formula rule and schedule • Access through web interface via local Wi-Fi and internet • Compatible with smart phones, tablets and computers • Available replacement of fertilizer volume, flow rate and compound • Automatic control shut and alarm generation when irrigation system stop working • Real time operation • Automatic/Manual mode
Controller	Integrated System - IoT, Sensor, Mobile Apps	Fertigation

MANUFACTURING INDUSTRY 4.0



Objectives:

- To improve manufacturing competitiveness using the applications of technological and business tools
- To create more technology driven SMEs

STRATEGIC ACTIONS

ACTION 4 Adopt Industry 4.0 to fuel the digital transformation of the manufacturing Sector

Programme Examples:

- Automation, adoption of IoT, Application of Big data, Application of advanced Human Computer Interaction

ACTION 5 Explore various opportunities for alternative energy

Programme Examples:

- R&D on Hydrogen Fuel Cell technology and application

ACTION 6 Provide incentives to grow local SMEs and to provide opportunities for globalisation

Programme Examples:

- Funding support for strategic SMEs, Investment incentive, Entrepreneur development, Commercialisation & Acceleration Support

TOURISM



Tourist Attraction - Sarawak Regatta

Objectives:

- To position Sarawak as a major tourist destination using digital technology
- To create better presentation of tourism product and services using digital technology to enhance tourist experience

STRATEGIC ACTIONS

ACTION 7

Promote Sarawak through Digital Media

Programme Examples:

- Building the Sarawak tourism content and promote it through blogs, websites, Facebook, and other digital channels

ACTION 8

Provide a digital platform for tourism product and service providers to enhance their business

Programme Examples:

- Create one-stop digital platform supported by big data analysis to promote and transact tourism-related products

ACTION 9

Personalisation of tourist experience online

Programme Examples:

- Standard Portal and App Development, Improve websites and portals, User friendly Tour planning, applications/functions, AR/VR



SMART CITY

1. Physical Infrastructure & Utilities



Objectives:

- To provide high quality and efficient services to the *rakyat*
- To provide healthier living environment and efficient waste management

STRATEGIC ACTIONS

ACTION 10

Provide clean, reliable and cost-efficient energy using smart technologies

Programme Examples:

- Real-time monitoring apps, Sensor technologies, Smart gas meters, Portal for customer to manage, Integrated Smart Development Planning

ACTION 11

Provide efficient water supply services leveraging on smart technologies

Programme Examples:

- Smart Water Metering System, Intelligent water supply management system, State-wide treated water grid, constant and sufficient supply of treated water. Address NRW.

ACTION 12

Develop a smart solid waste management system.

Programme Examples:

- Upgrading and Improvement Works to Green Waste Disposal Centre, Integrated and intelligent waste planning and management. Smart Bin, Smart Garbage, IoT, Tracking of garbage collection, Community engagement

ACTION 13

Enhance the efficiency of wastewater management to prevent pollution and water-borne diseases

Programme Examples:

- Modernisation of waste management facility, modern sewerage system including sensor-integrated sewerage treatment plant

ACTION 14

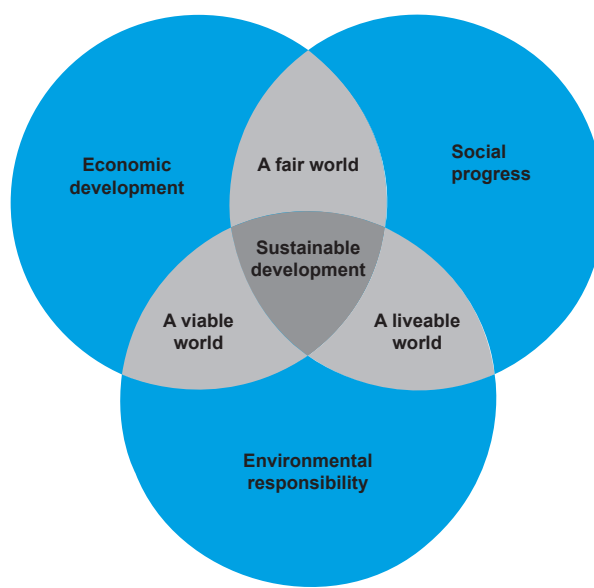
Develop a flood management and response system.

Programme Examples:

- Smart and sustainable stormwater management, Integrated smart development planning, storm water management, flood information management system.

SMART CITY

2. Housing & Urban Development



Objectives:

- To achieve smarter and more comfortable living
- To create environment-friendly urban living and workspace

STRATEGIC ACTIONS

ACTION 15

Ensure efficient development of sustainable housing and enhance convenience, safety and comfort for city dwellers

Programme Examples:

- Implementing smart housing design platform, automated surveillance for crime monitoring and prevention using big data analytics, centralised infrastructure and utility mapping, free public WiFi hotspots and smart systems for development planning including strata housing management.

ACTION 16

Implement Green Building Index (GBI) in new government and private non-residential buildings in major cities and towns

Programme Examples:

- Developing IoT evaluation platform of Green Building Index (policy support, develop professionals in green building design and management)

SMART CITY

3. Transport, Logistics & Supply Chain



Artist impression of LRT Management System

STRATEGIC ACTIONS

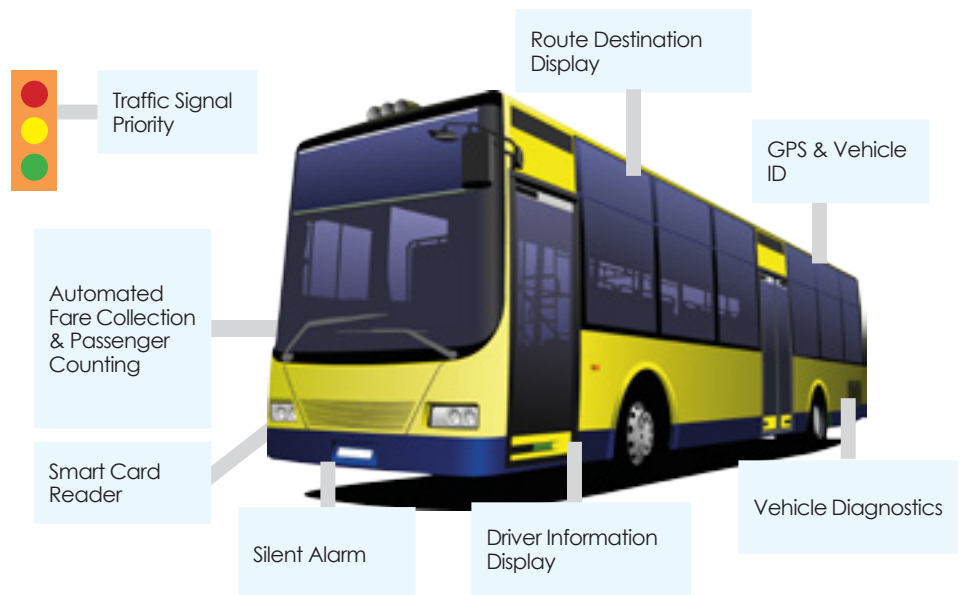
ACTION 17 Establish a comfortable and safe mobility for commuters using smart technologies

Programme Examples:

- Integrated transportation system for Kuching, Intelligent route selection, digital asset management, smart traffic light, smart parking, digital information signage, smart buses, Bus Information System (BIS), LRT, Electric vehicles

Objectives:

- To improve mobility and user experience in transport service
- To develop more efficient logistics support for digital economy activity



City bus connected to intelligent transport system

ACTION 18 Develop integrated logistics solutions to support e-commerce.

Programme Examples:

- e-warehousing, Integrated Free Trade Zone, vessel tracking and management system, shipping and cargo information system

DIGITAL HEALTH



STRATEGIC ACTIONS

ACTION 19

Increase accessibility and improve level of medical and health services.

Programme Examples:

- With internet connection and smart devices, patient's care option will not be limited by geographic location. Online platform for pharmacist and doctors to serve patients.

ACTION 20

Safeguard the health of people who are living, staying and working in Sarawak.

Programme Examples:

- Integrated monitoring system for all foreign workers in terms of health records and immigration

ACTION 21

Provide world-class specialist healthcare services and grow health tourism in Sarawak.

Programme Examples:

- Establish Healthcare Travel System to integrate information on specialist health care services such as oncology, orthopaedic, cardiology, cardiothoracic, aesthetic medicine in order to promote attractive medical packages to Sarawak.
- To encourage establishment of high tourism and health services standard private hospital.



Objectives:

- To improve the accessibility, efficiency and quality of medical and health services for everyone, everywhere
- To improve the management of communicable diseases
- To achieve higher revenue from health tourism in Sarawak



Objectives:

- To increase sales and revenue from export of Sarawak products globally
- To improve the marketing of local products via e-commerce strategies and platform

STRATEGIC ACTIONS

ACTION 22

Improve the Sarawak e-Commerce and services ecosystem

Programme Examples:

- Intelligent supply chain management, Policies, DFTZ, fulfilment hubs, applications (online auctions, online shopping), eMarket Place “produksarawak.com”

ACTION 23

Increase awareness of Sarawak products and services through digital platform.

Programme Examples:

- Marketing and branding, digital networking

ACTION 24

Increase e-Commerce adoption.

Programme Examples:

- Business assistance, education, R&D.

ACTION 25

Create a FinTech platform that provides technological and business tools to secure a competitive advantage in current and future markets.

Programme Examples:

- Set-up FinTech platform such as SarawakPay, Provide incentive for the operation and adoption of FinTech by Government and industry and to expand the platform to cross border integration

DIGITAL GOVERNMENT



STRATEGIC ACTIONS

ACTION 26

Initiate Digital Government based on five principles:

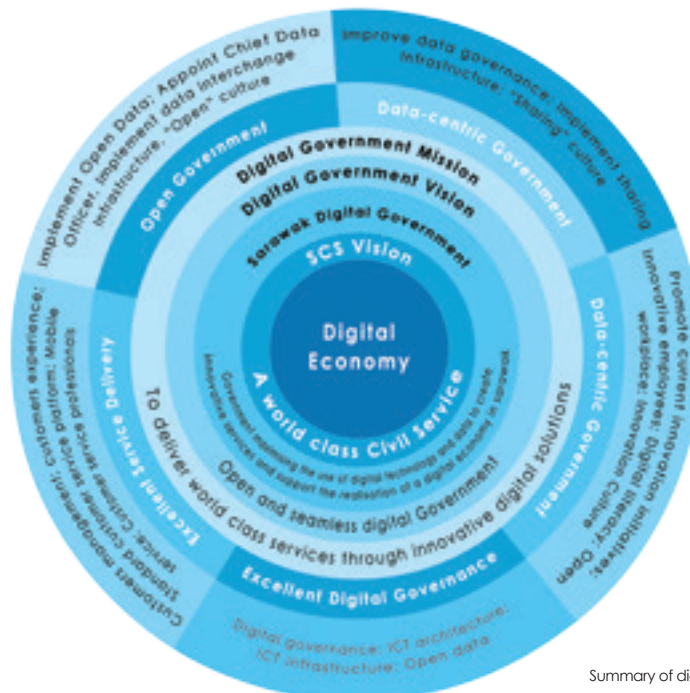
- Open Government
- Data-Centric Government
- Innovative Government
- Excellent Service Delivery
- Excellent Digital Governance

Programme Examples:

- Open Data, encourage innovation and new ideas in using government data
- Executive Information System (EIS)/Business Intelligence (BI)
- Initiatives such as Innovative and Creativities Circles, Key Focus Activity (KFA), High Performance Team Solutions
- Improvement on service delivery especially Frontline service improvement
- Smart applications to enhance service, One stop service (Single-Sign on, Sarawak ID and blockchain)
- Single Government Bill (SGB)

Objectives:

- To create an open and seamless digital government
- To innovate and improve government service delivery



Summary of digital government plan for Sarawak

SOCIAL



Aerial view of Sarawak Stadium



Objectives:

- To improve social well-being of Sarawakians
- To preserve Sarawak's culture and heritage

STRATEGIC ACTIONS

ACTION 27

SPORTS : Rollout smart digital technology in sports to enhance spectator experience and attendance at the stadium.
To foster game development, eSports, marketing and sport science.

Programme Examples:

- Smart stadiums, using technology for sponsorship and integration, user experience with high-speed connectivity supported by e-Commerce of merchandise and food.
- Establish game development start-ups (digital nomad) at sports complex and promotion of eSports. Enhance sport science using digital technology.

ACTION 28

ARTS & CULTURE : Preserve the value of our heritage and culture physically and digitally to enhance tourism in Sarawak.

Programme Examples:

- To keep record digitally on all pictures, literatures, media on arts and cultures as our treasure.
- Old Kuching-Digital Heritage, AR/VR apps to recreate experience on heritage and culture.

ACTION 29

SOCIAL : Accelerate the social development support to disadvantaged communities through the use of digital and data technologies.

Programme Examples:

- To provide an avenue for micro entrepreneurs under the welfare list to market their products through e-Commerce e.g. Digital Kenyalang.
- To develop big data and support system for people who needs protection and rehabilitation.



ENABLERS FOR SARAWAK DIGITAL ECONOMY

DIGITAL INFRASTRUCTURE



Objectives:

- To increase the broadband coverage and upgrade its speed and reliability;
- To optimise the utilisation of existing and new tele-communication and network infrastructure; and
- To achieve higher investment inflow in digital businesses

STRATEGIC ACTIONS

ACTION 30

Develop the infrastructure in more cost-effective way using Hub and Spoke development concept in all towns in Sarawak by end of 2020.

Programme Examples:

- Multi-tiered ring network design with alternative back-up paths, Reliable power supply for the core tiers.

ACTION 31

Develop an international internet gateway in Sarawak and a new submarine cable system to connect directly to international internet gateway.

Programme Examples:

- Alternative internet gateway to and from Sarawak.

ACTION 32

Liberalise the infrastructure sector to attract foreign digital businesses to set-up their operation in Sarawak.

Programme Examples:

- Allow more service providers, data centres and server farms, consider PPP, BOT, PFI. To reduce price of internet access to attract volume.

ACTION 33

Provide affordable and high-speed internet access for the masses through carrier-independent backhaul and backbone data transmission services.

Programme Examples:

- Use existing dark fibres for public/commercial, to increase UX 100Mbps in populated and strategic areas and 20-50Mbps in rural areas.

DIGITAL SKILLS & TALENT DEVELOPMENT



STEM Programme in school



Objectives:

- To develop human resource for Sarawak's Digital Economy;
- To enhance our education system and infrastructure especially in STEM

STRATEGIC ACTIONS

ACTION 34

Build, develop and head hunt a workforce that is agile, digital-savvy and industry-ready.

Programme Examples:

- Workforce planning and training, Scholarships, industrial attachments, Recognised /accredited online courses, attract talents to Sarawak, e.g. CENTEXS-HUAWEI Digital Training Lab.

ACTION 35

Strengthen current STEM and ICT education in primary, secondary and tertiary institutions.

Programme Examples:

- Upgrade facilities, train teachers, develop student's interest and capacity, recruit post Form Five students into TVET, teach kids early on technology and coding, programming, sourcing, etc.

DIGITAL ECONOMY RESEARCH & DEVELOPMENT



Research in biodiversity

STRATEGIC ACTIONS

ACTION 36

Establish a Centre of Excellence (CoE) to engage in fundamental and translational research in core areas of digital economy and other economic sectors in partnership with universities, industry, governments and community.

Programme Examples:

- Carry out strategic and translational research (big data and data analytics, software systems, IoT, visualisation, Cyber-Security, and etc.)
- To support economic sectors and the enablers of digital economy.
- To develop strategies to help commercialise products.

Objectives:

- To develop and congregate knowledge and research capabilities to support digital economy in Sarawak



Malaysian Global Innovation & Creativity (MaGIC)
Event in Sarawak

Objectives:

- To inculcate the culture of innovation;
- To increase the number of successful technopreneurs including spin-offs and start-ups; and
- To achieve continuous technology transfer and commercialisation.

STRATEGIC ACTIONS

ACTION 37

To establish one innovation centre in each divisions and facilitate others (private sectors, universities and communities).

Programme Examples:

- Workspace, Exposure, Mentoring, IP protection, Facilitate collaboration.

ACTION 38

Establish Digital Village to facilitate technology transfer and commercialisation and accelerate the maturity of the start-ups through global accelerator partnership.

Programme Examples:

- Funding, R&D, Strategic partnership, Market access, Policy support;
- Access to biodiversity and IP, source for talent.

ACTION 39

Establish "Launch Sarawak" Programme at Digital Village to provide a transformative pathway to support innovation, intellectual property creation and spin-offs.

Programme Examples:

- "Launch Sarawak" Programme, E-Com Y30, IP support;
- Create funding and investment opportunities.

ACTION 40

Setup "Digital Landing Pads" overseas to promote Sarawak as a destination for high tech innovation and entrepreneurship like Silicon Valley or Shanghai, etc. and to encourage both domestic and foreign investment.

Programme Examples:

- Set up presence in global markets

DIGITAL & DATA



Sarawak Data Centre

Objectives:

- To use data analysis for better decision making
- To develop and use data as our “next oil”.

STRATEGIC ACTIONS

ACTION 41

Collect data from current and future digital services to support data-driven decision-making.

Programme Examples:

- Coordinate data standard, Business intelligence services to support SMEs,
- Data centres.

ACTION 42

Monetise Big Data.

Programme Examples:

- Encourage and facilitate data sharing to develop innovative products and services e.g. integrating rainfall and weather data from DID with soil and crops data from DOA, economic data from SPU, L&S data etc. to do precision farming.

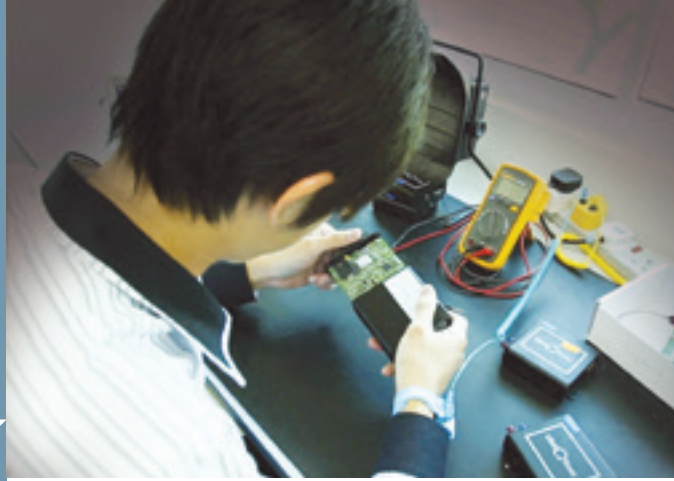
ACTION 43

Develop an Open Data Ecosystem.

Programme Examples:

- Open data portal and apps, Promote data accountability, Government Big Data launch in April 2018.

CYBER- SECURITY



Objectives:

- To increase the awareness and knowledge among individuals and organisations on cyber-security;
- To improve resilience against cyber-security threats .

STRATEGIC ACTIONS

ACTION 44

Develop a cyber-security code of practice to improve awareness about cyber-security.

Programme Examples:

- Education and awareness programmes on data security and privacy which are fundamental in building customer trust.

ACTION 45

Create an effective legal framework to tackle cyber risks in Sarawak.

Programme Examples:

- Laws to protect DE players, Facilitate resolution of cyber disputes or frauds.

ACTION 46

Protect the State's Critical Information Infrastructure (CII).

Programme Examples:

- Set up advance Security Operation Centre to protect Sarawak from and manage cyber attack by team of highly skilled cyber-security analyst.

DIGITAL INCLUSIVITY



ICT Training at Sarikei Innovation Centre

STRATEGIC ACTIONS

ACTION 47

Establish a digital-ready community through developing digital skills and competencies and promoting inclusive digital participation

Objectives:

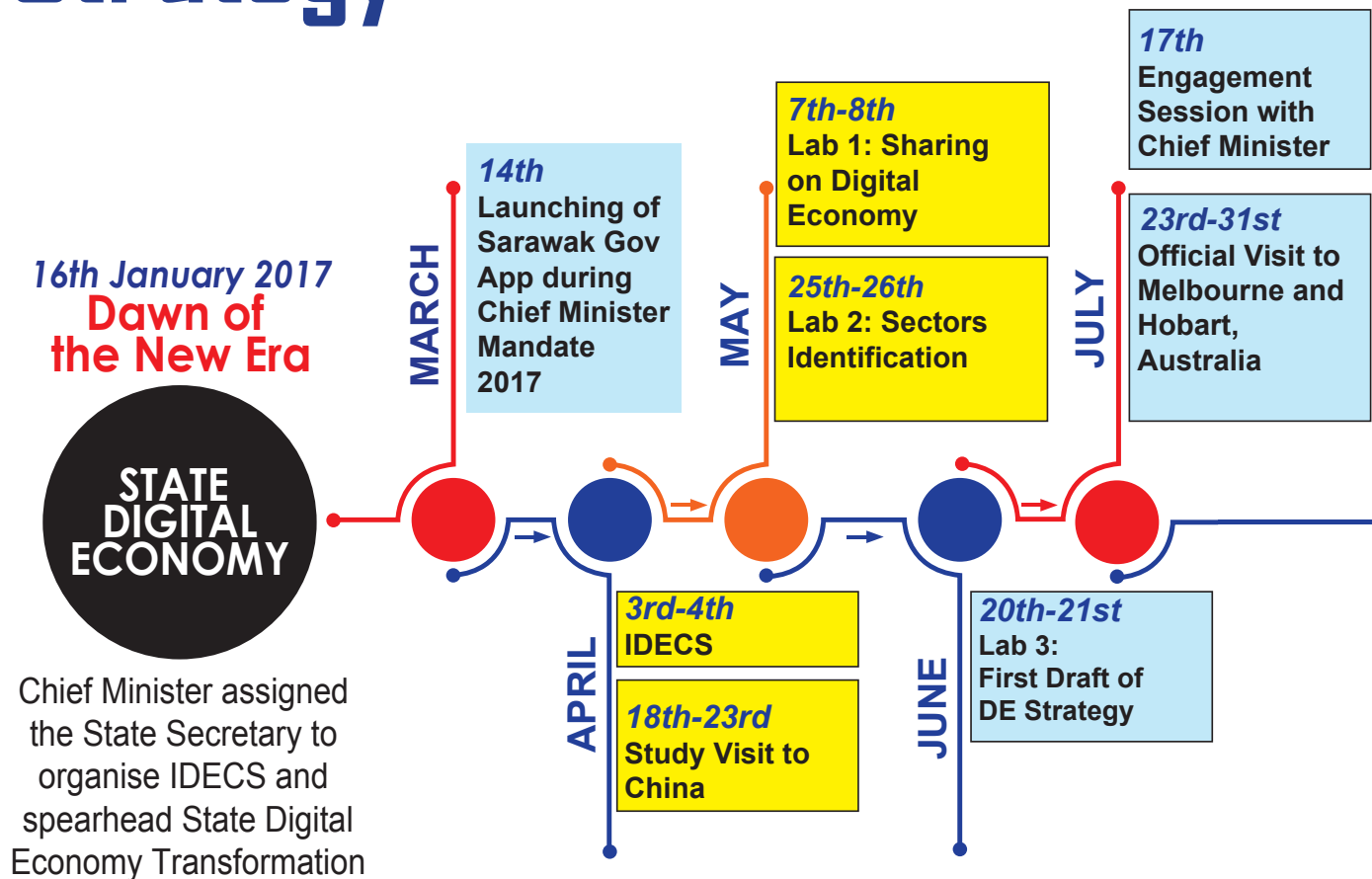
- To enhance the competency and readiness of all communities for digital economy

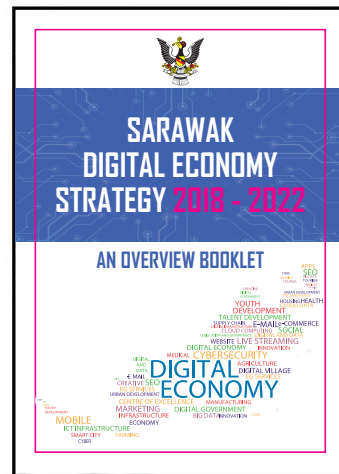
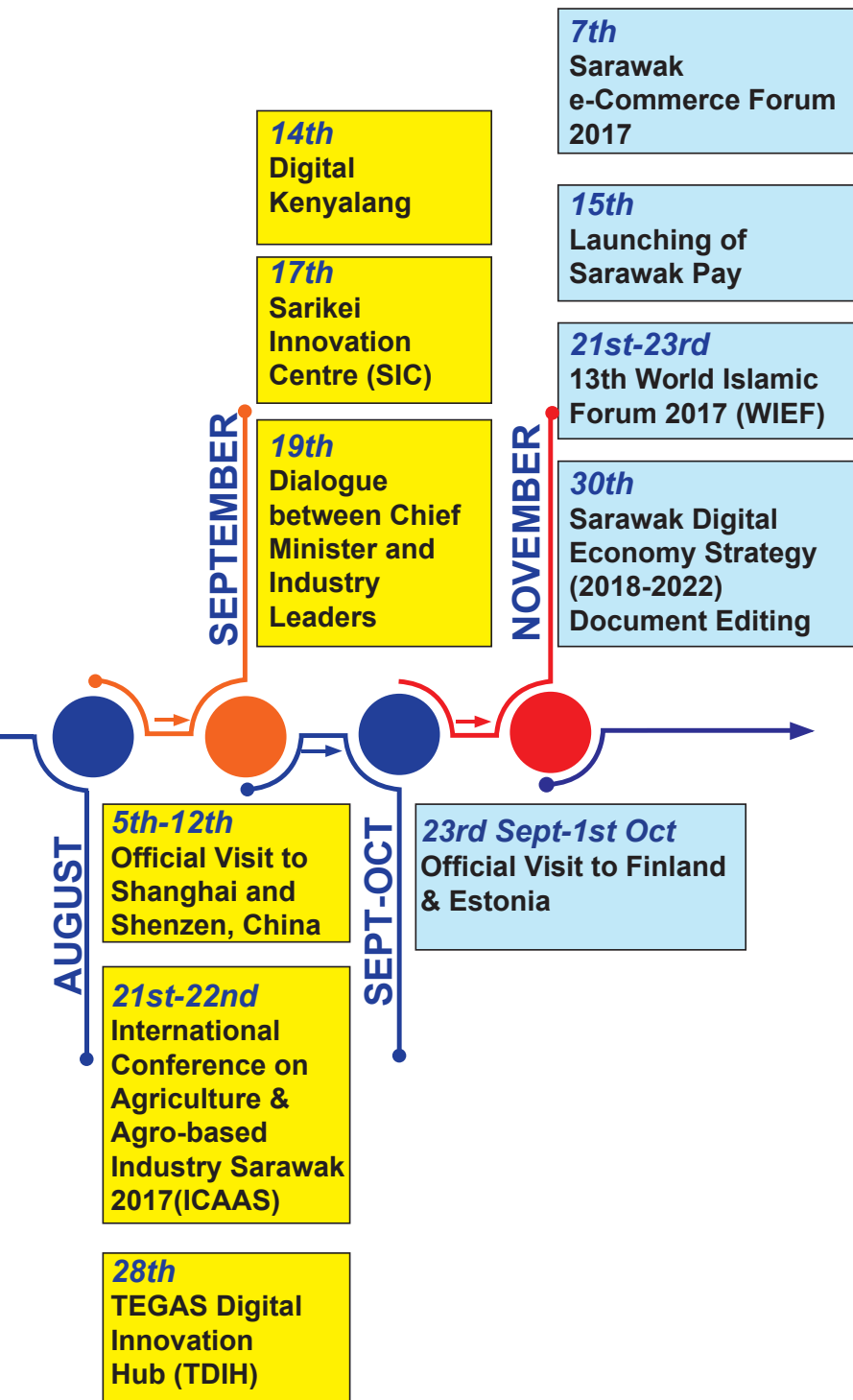
Programme Examples:

- Bridging digital divide in rural and remote areas, widespread trainings and awareness programmes on the use of ICT for education, business and entrepreneurship.
- Provision of digital payment gateway such as Sarawak Pay in the absence of banking facilities in remote areas.
- Developing self-reliance in digital technology for activities such as repair of computer, mobile phones and other devices.



The Journey Towards Digital Economy Strategy





AND BEYOND...
Facilitate dawn of
the new era

SARAWAK DIGITAL ECO



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